

ON SOME RECENT AND FOSSIL AUSTRALASIAN  
SPECIES OF PHILOBRYÆ.

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[Read August 2, 1898.]

PLATE IV., FIGURES 8-10.

The bivalved mollusca, which constitute the genus *Philobrya*, are minute shells, which present in their adult state various characters proper to the very young states of *Mytilidæ*, *Aviculidæ*, and *Arcidæ*. They were little known to malacologists till the appearance last year of M. Felix Bernard's "Etudes comparatives sur les genres *Philobrya* et *Hochstetteria*." Bernard has provisionally placed these two genera as a subfamily (*Philobryinæ*) in the family *Aviculidæ*; but the absence of prismatic structure of the test, and the existence of a copious periostracum incline me to the opinion that the systematic position of this subfamily is rather with *Mytilidæ* than with *Aviculidæ*.

Of the eleven species referred by Mr. Bernard to this subfamily, nine occur in the Southern Hemisphere, chiefly in moderately high latitudes. The recognition of the existence of *Philobrya* in Australian waters is, therefore, not unexpected; but greater interest is attached to the fossil record, here announced for the first time, as may be gathered from the following extract from M. Bernard's essay:—"Il est indispensable de rechercher si parmi les formes fossiles il n'en existe aucune qui pourrait soit rentrer dans le genre *Philobrya*, soit s'en rapprocher plus que ne font les *Anisomyaires* actuels. Je n'ai trouvé aucune indication de cette nature en ce qui concerne les faunes secondaire et tertiaire. La cause en est peut-être dans la petitesse de ces coquilles qui peuvent avoir échappé aux investigations, ou bien avoir été considérées par ceux qui les ont recueillies comme des jeunes ou de petites espèces d'*Aviculidés*, de *Mytilidés* ou même de *Lima*. Les fossiles primaires m'ont fourni quelques indications qui, tout en manquant pour le moment de précision, me paraissent devoir soulever une utile discussion." Journ. de Conch., No. 1, 1897, p. 41.

The additional species—subjects of the following records are:—Two living in Southern Australia and Tasmania, one from the Newer Tertiary of New Zealand, and two from the Older Tertiary of Victoria.

**Philobrya crenulatifera, Tate.**

*Myrina crenatulifera*, Tate, Trans. Roy. Soc., S. Australia 1892, p. 131, t.1, figs. 11 and 11a.

This shell has all the interior characters proper to *Philobrya*, but its inflated umbo is crowned by a subcircular (not calyculate) prodissoconch which does not interrupt the convexity of the umbo. The absence of costæ further suggests a reference to *Hochstetteria*, but the elongate ligamental pit and almost terminal umbo are, however, not in agreement thereto.

In addition to the South Australia locality of the type, specimens from two Victorian localities have been submitted to me. Barwon Heads, *Mr. T. S. Hall*; Flinders Island, *Mr. G. B. Pritchard*.

**Philobrya fimbriata, sp. nov.** Pl. iv., fig. 8.

Shell thick, ventricose, contour obliquely subquadrangular, umbos terminal. Prodissoconch relatively small, though prominent, semicircular, its outer margin defined by an elevated rim. Anterior margin of valve inclined at an angle of from 60° to 70° to the dorsal margin; surface ornamented with about fourteen feeble angular radial ribs, crossed by regularly disposed concentric threads (not so strong as the radial ones), which form imbricating serratures at the intercrossing. Test covered with a tawny subpellucid epidermis, which is raised into setæ on the radial costæ (corresponding with the serratures thereon), and extends as a fringe around the ventral margin of the shell.

Ligamental pit lanceolate, directed obliquely backwards for one-third or one-half-length of the posterior hinge-line. The transverse crenulations on the posterior of the hinge-line are reduced to short crowded striæ.

*Dimensions* of a large example.—Ant. post. diameter, 3·75; dorso-ventral diameter, 4·5; thickness, 3 mm.; but the average size is about three by four.

*Habitats*.—TASMANIA, Derwent and Frederick Henry Bay, coll. Mr. May; SOUTH AUSTRALIA in dredge-siftings from St. Vincent and Spencer Gulfs—dead shells numerous, living examples few, coll. Dr. Joseph Verco.

VICTORIA, among *Kellia rostulata*, Tate, dredged in life, seven to nine fathoms at Port Phillip Heads by the late Mr. J. B. Wilson (my collection).

**Philobrya trigonopsis, Hutton, sp.**

*Mytilicardia trigonopsis*, Hutton, Trans. New Zealand Institute, vol. xvii., p. 324, 1885; *id.*, "Macleay Memorial Volume," p. 85, t. 9, f. 94 a-b, 1893.

*Habitats*.—Wanganui (Pliocene) and Petane (Miocene), New Zealand.

The above emended generic reference is based on the study of cotypes kindly transmitted to me by the author of the species. It closely resembles *P. costata*, but which has thicker and closer ribs.

**Philobrya Bernardi**, *sp. nov.* Pl. iv., fig. 10.

Shell rather thin, ventricose, contour obliquely subquadrangular; umbones nearly terminal, prodissoconch large and prominent. Anterior margin nearly straight, or slightly curved, making a right angle with the hinge-line; posterior margin straight, ventral-margin well-arched. An obsolete keel defines a somewhat steeply inclined post-umbonal slope; anterior to which the surface is ornamented by about eight slender costæ, which are crossed by concentric threads of nearly equal calibre with the radial threads, regularly disposed, but with increasing intervals towards the ventral margin; these concentric threads produce slight serratures on the radial threads.

Internally, the posterior margin is slightly interrupted by five or six crenulations. The ligamental pit is short, lanceolate, and directed backwards; posterior to which the hinge-line is obsolete transversely ridged. A very deep byssal notch terminates the almost obsolete anterior of the hinge-line.

This new species is named in compliment to M. Felix Bernard,\* of the Natural History Museum at Paris, whose gift of specimens of *P. costata* has largely assisted me in the elaboration of the species herein dealt with. It is conspicuous among congeners by open fenestrated ornament.

*Horizon*.—Eocene, Victoria; Muddy Creek (2 exs.), Shelford (1 ex.), Curlewis (1 ex.), collected by J. Dennant; and Fyansford (1 ex.), collected by J. F. Mulder.

**Philobrya prænuntia**, *sp. nov.* Pl. iv., fig. 9.

Shell rather thin, ventricose, inequilateral; obliquely oval-rhomboid in contour; prodissoconch relatively very large and prominent.

The anterior margin is convex. The ornament consists of about twelve slender radial costæ, on which are formed slight serratures by the very feeble concentric laminations which are visible in the interradian spaces.

The ligamental pit is shortly oval-lanceolate and directed backwards; the anterior portion of the hinge-line has about fourteen transverse ridges, whilst the posterior portion is only obsolete transversely ridged.

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\* It is with profound regret that I announce this dedication to be posthumous, as that talented young malacologist died August 12, 1898, at the early age of thirty-five years.

This species has some resemblance to *P. Filholi*, but is less inequilateral, and the costæ are more numerous and slender. Its most striking feature is the relatively wide anterior area.

*Horizon*.—Eocene, Victoria, at Cape Otway, one ex. (since lost) collected by J. Dennant.

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LIST OF DESCRIBED SPECIES OF PHILOBRYA.

(a) RECENT.

- P. setosa*, *P. P. Carpenter*, 1864. California.  
*P. Munieri*, *F. Bernard*, 1896. France.  
*P. atlantica*, *Dall*, 1895. Argentine.  
*P. meridionalis*, *E. A. Smith*, 1885 (*Dacrydium*). Prince Edward and Marion Islands.  
*P. aviculoides*, *Velain*, 1876. Isle St. Paul.  
*P. meleagrina*, *Bernard*, 1896. Stewart Island, N.Z.  
*P. costata*, *Bernard*, 1896. Stewart Island, N.Z.  
*P. Filholi*, *Bernard*, 1897. Stewart Island, N.Z.  
*P. crenatulifera*, *Tate*, 1892 (*Myrina*). S. Australia and Victoria.  
*P. fimbriata*, *Tate*, 1898. S. Australia and Tasmania.  
*P. (Hochstetteria) crenella*, *Velain*, 1876. Isles St. Paul and Amsterdam.  
*P. (Hochstetteria) modiolina*, *Velain*, 1876. Isles St. Paul and Amsterdam.  
*P. (Hochstetteria) trapezina*, *Bernard*, 1897. Stewart Island.

(b) FOSSIL.

- P. trigonopsis*, *Hutton*, 1885 (*Mytilicardia*). Pliocene and Miocene, N. Zealand.  
*P. Bernardi*, *Tate*, 1898. Eocene, Victoria.  
*P. prænuntia*, *Tate*, 1898. Eocene, Victoria.

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EXPLANATION TO PLATE IV.

[All the figures considerably enlarged.]

1. *Eulima orthopleura*, *Tate*, 1898.
2. *Eulima commensalis*, *Tate*, 1898.
3. *Eulima indiscreta*, *Tate*, 1898.
4. *Eulimella tricincta*, *Tate*, 1898.
5. *Odontostomia infrasulcata*, *Tate*, 1898.
6. *Odontostomia Mayii*, *Tate*, 1898.
7. *Turbonilla varicifera*, *Tate*, 1898.
8. *Philobrya fimbriata*, *Tate*, 1898.
9. *Philobrya prænuntia*, *Tate*, 1898.
10. *Philobrya Bernardi*, *Tate*, 1898.